



Communicable Disease and Epidemiology News

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IN THE JULY 1999 ISSUE:

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- **Lice Aren't Nice: New Fact Sheet on Lice Control and Treatment**
- **Mark Your Calendars: Upcoming Immunization Update**

Salmonellosis Outbreak

On June 19, Public Health – Seattle & King County (PHSKC) was notified by an astute microbiologist from Children's Hospital and Medical Center of three cases of an uncommon *Salmonella* serogroup C2, subsequently serotyped as *S. muenchen*. Ordinarily Washington State reports 10 cases of *S. muenchen* each year. Interviews of the three initial cases revealed that all had consumed fruit smoothies at three different outlets of the same restaurant chain (restaurant A). On June 21, an environmental investigation examined the possible means for *Salmonella* contamination. This investigation included reviewing the ingredient list, a health assessment of employees, and food handling and storage practices. A common smoothie ingredient was found to be fresh squeezed, unpasteurized orange juice produced by Sun Orchard, Inc. of Tempe, Arizona. Smoothie samples and swabs from blenders and juice dispensers were sent to the Washington State Department of Health (DOH) Public Health Laboratories for culture.

On June 22, PHSKC issued an advisory to local health care providers and laboratories about the increase in *Salmonella* in order to promote case finding and reporting. Also on June 22, PHSKC placed a hold on the orange juice at restaurant A until the vehicle for infection was confirmed. A major wholesale distributor suspended further distribution of the orange juice while the investigation was underway. Unopened containers of orange juice and other samples of smoothie ingredients were submitted to DOH Laboratories for testing.

On June 24, the Oregon State Health Division notified Washington State DOH that Sun Orchard orange juice had been implicated in an outbreak of *S. muenchen* in a

Portland restaurant. In addition, two King County residents who had not eaten at any outlets of restaurant A developed *S. muenchen* infection. These individuals consumed the implicated orange juice at two additional Portland restaurants. Multiple subsequent cases in Washington were also exposed to the implicated orange juice through sources other than restaurant A.

In a case-control study conducted by PHSKC of an initial 9 *S. muenchen* cases and 29 well restaurant A patrons, illness was significantly associated with consumption of orange juice containing smoothies (100% of cases exposed vs. 14% of controls, odds ratio undefined, $p=.000004$). On June 25, Sun Orchard agreed to a voluntary recall of the product. By June 26, *Salmonella* had been detected from orange juice, blenders and dispenser samples analyzed by the DOH and the isolate from the juice subsequently was shown to match the Oregon and Washington human isolates by molecular strain typing. Subsequent laboratory testing of orange juice reserve samples by the FDA has now detected several serotypes of *Salmonella*, including the outbreak strain, from multiple lots of juice.

As of July 14, 69 King County residents have been confirmed to have *Salmonella* C2 infection; 59 of these have been typed *S. muenchen*. Testing of *Salmonella* C2 isolates using restriction fragment length polymorphism by Dr. Samadpour's laboratory at the University of Washington and pulsed-field gel electrophoresis at DOH Laboratories have identified an outbreak strain linking the environmental isolates and the majority of cases. Over 200 cases of *S. muenchen* associated with this outbreak have been identified from 14 states and two Canadian provinces with multiple cases still under investigation, making this the largest reported outbreak of

salmonellosis associated with unpasteurized orange juice. The source of the *Salmonella* contaminating the juice is still under investigation by the U.S. Food and Drug Administration (FDA) and the U.S. Department of Agriculture.

S. muenchen is one of over 2400 *Salmonella* serotypes that can cause illness in humans. *Salmonella* infection typically causes gastro-enteritis characterized by diarrhea, abdominal cramps, fever and dehydration. Bacteremia, meningitis, osteomyelitis and abscesses may also occur. *S. muenchen* accounted for approximately 1.6% of human *Salmonella* isolates reported to the Centers for Disease Control and Prevention (CDC) in 1997.

Unpasteurized juices, including fresh-squeezed, unpasteurized orange juice, are known health hazards that can result in serious illness and even death. Juice has been implicated in at least 15 outbreaks in the United States involving a variety of pathogens including *E. coli* 0157:H7, *Salmonella* species and *Cryptosporidium parvum*. **The FDA issued an Advisory in 1997 advising that children, older adults and persons with weakened immune systems should not consume unpasteurized juice or cider because of the potential for serious illness related to bacterial contamination of these products.** Unfortunately, many individuals are still unaware of the risks associated with consuming unpasteurized fruit juices. In fact, during the current outbreak, individuals and even commercial establishments serving the contaminated juice, were unaware that the product was unpasteurized. Although the FDA has required juice manufacturers to place warning labels on unpasteurized products, the agency granted exemptions to the labeling

requirements for producers of unpasteurized citrus juice who designed procedures that result in a five-log reduction of bacterial contamination. Unfortunately, the current outbreak appears to demonstrate a failure of that system. FDA regulations do not apply to producers making less than 40,000 gallons of unpasteurized juice per year or to establishments serving juice by the glass!

In our opinion, pasteurization is the best means currently available to improve the safety of commercially prepared juice products. **Accordingly, we advise all individuals in the community to avoid consumption of commercially prepared unpasteurized juice products.** In the absence of national requirements to ensure the safety of commercially prepared juice products, PHSKC will explore ways to reduce the risk of illness due to commercially prepared juice products locally. Health care providers can decrease foodborne illness by educating their patients and others about food safety. Discussions should go beyond the risks of undercooked meat, fish and poultry to include the hazards of raw fruits and vegetables and unpasteurized juices, as these are increasingly implicated in foodborne outbreaks. The FDA recently issued an advisory about the hazards of raw sprouts as well (<http://www.fda.gov/bbs/topics/new/new00684.html>). The FDA web site provides much more detail about labeling of food products and food safety. In addition, the PHSKC web site contains fact

sheets on food safety and juice preparation.

We would like to acknowledge the important contributions of the Children's Hospital Microbiology Laboratory in facilitating the rapid identification of this outbreak, and of Michael B. Curtis, MD, EIS Officer, Washington State DOH for his valuable assistance in this investigation.

Lice Aren't Nice

A public health fact sheet on the prevention and treatment of head lice has recently been updated with new information on pesticide resistance and alternative non-chemical treatment options. Emphasis is now placed on physical removal of lice and nits through daily combing (using bright lighting and magnification) with an effective lice comb for 21 days. We urge health care providers to take advantage of this fact sheet when educating patients and parents on prevention and treatment of head lice. The new information is available by contacting our office at 206-296-4774, on our hotline at 206-296-4949, or on our website at <http://www.metrokc.gov/HEALTH/prevcont/lice97.htm>.

This fact sheet was developed with the collaboration of public health professionals in King and Snohomish Counties.

Immunization Update

Virginia Mason Medical Center and Public Health – Seattle & King County are co-sponsoring the CDC **Immunization Update 1999** on Thursday, September 16th. The

exact time of this 2.5 hour course has not yet been announced, but it has typically been scheduled in the morning.

This live, interactive program will provide updates on new vaccines and vaccine combinations, new recommendations from ACIP, and why and how to assess the immunization levels in your practice. CME/CEU credits will be offered for a variety of professions.

If you are interested in receiving registration information, please call Amy Patton at 206-205-5803, or email amy.patton@metrokc.gov.

Broadcast Fax

The PHSKC maintains a list of Seattle-King County health care providers who wish to receive urgent public health messages. If you would like to be added to our fax list, please call 206-296-4774 or fax 206-296-4803.

Report:	(area code 206)
AIDS	296-4645
Communicable Disease	296-4774
STDs	731-3954
Tuberculosis	731-4579
24-hr Report Line	296-4782
After hours	682-7321
Hotlines:	
CD Hotline	296-4949
HIV/STD Hotline	205-STDS

<http://www.metrokc.gov/health/>

REPORTED CASES OF SELECTED DISEASES SEATTLE-KING COUNTY 1999				
	CASES REPORTED IN JUNE		CASES REPORTED THROUGH JUNE	
	1999	1998	1999	1998
VACCINE-PREVENTABLE DISEASES				
Mumps	0	0	1	0
Measles	0	0	1	0
Pertussis	8	13	368	87
Rubella	0	0	2	1
SEXUALLY TRANSMITTED DISEASES				
Syphilis	7	4	43	19
Gonorrhea	67	70	463	490
Chlamydial infections	342	289	1906	1693
Herpes, genital	74	51	345	357
Pelvic Inflammatory Disease	23	30	134	126
Syphilis, late	2	4	19	16
ENTERIC DISEASES				
Giardiasis	11	17	85	99
Salmonellosis	73	27	145	82
Shigellosis	7	2	29	37
Campylobacteriosis	28	24	119	107
E.coli O157:H7	0	1	14	5
HEPATITIS				
Hepatitis A	28	27	68	296
Hepatitis B	7	7	17	34
Hepatitis C/non-A, non-B	0	0	2	1
AIDS	23	14	107	134
TUBERCULOSIS	4	17	46	64
MENINGITIS/INVASIVE DISEASE				
Haemophilus influenzae	0	0	0	1
Meningococcal disease	0	1	11	11